

**A new species of *Pseudogeloius* Dirsh, 1963,
from Madagascar**

(Orth. Pyrgomorphidae)

BY

D. KEITH MCE. KEVAN.

Macdonald College.

(Láms. IX-XII.)

***Pseudogeloius* Dirsh.**

Geloius Bolívar, 1905, 284 *et auctt. (partim)*.

Pseudogeloius Dirsh, 1963, 92; Kevan and Akbar, 1964, 1524.

This recently described genus bears a close superficial resemblance to *Geloius*, Saussure, 1899, but its elaborate male genitalia, and particularly the phallic structures indicate that the relationship is not close. The latter will be discussed in detail elsewhere (Akbar and Kevan, *in preparation*). Apart from the genitalic characters, *Pseudogeloius* differs externally from *Geloius* in the absence of spine-like tubercles on the anterior femora of the males and in the complete absence of tegminal scales (minute, but present in *Geloius*) in both sexes.

Type species (by monotypy): *Pseudogeloius relictus* Dirsh, 1963.

Three species of *Pseudogeloius* may be recognized: the type species, a new species, and *P. decorsei* (Bolívar), here transferred from *Geloius*.

***Pseudogeloius relictus* Dirsh.**

(Figs. 1, 2, 6, 7, 11, 19.)

Pseudogeloius relictus Dirsh, 1963, 93, 94, figs. 25 (1-9), 26 (1-9).

This species was described from eastern Madagascar (Perinet and La Dakoa). It is known to me also from southern Madagascar by material collected by A. Seyrig (mostly in the Instituto Español de Entomología, Madrid), as follows: 6 ♂♂, 3 ♀♀ (1 immature), Be-

vilany, IV.1932; 1 ♂ (immature), 2 ♀ ♀, Antanimora, IV.1932; 3 ♂ ♂, 14 ♀ ♀, Sakavé, 30 km. E. Antanimora, 4-5.IV.1932 (2 ♀ ♀ labelled "Secave, Seyrig" only); 1 ♂, Behara, II.1938.

The material before me varies considerably in size, particularly in the females. The male cerci of most specimens vary only very slightly in their characteristic shape (see Dirsh, 1963 and figs. 11, 12). Two of the males from Sakavé, however, have modified cerci (figs. 13-15). In their general external morphology these atypical specimens are indistinguishable from the others except that the posterior margin of the tenth abdominal tergum is less elaborately excised, particularly in the specimen for which this is illustrated (fig. 13). This specimen also differs rather more in the exact form of the cingulum valves and associated phallic structures than all other specimens examined (fig. 19). Nevertheless this variation is slight, and I do not believe the specimen represents a separate species - all other evidence is against this. Fig. 16 illustrates the cercus of the last-instar male nymph, which is conical with a large inwardly directed appendix. The immature female has a slightly narrower fastigium verticis and, as in most Pyrgomorphidae, proportionately shorter, broader antennae, so that it closely resembles the adult of *P. decorsei*.

I am not altogether satisfied that *P. relictus* is distinct from *P. decorsei*, particularly in view of the variation in the cerci of the former; but until more material becomes available, I prefer to recognize both species. It is perhaps noteworthy that the cercus of the nymph of *P. relictus* is basically conical, as described by Bolívar (1905) for *Geloius decorsei* (see below), and it may be that the missing syntypic male of that species was, in fact, immature; its small size (21 mm.) also suggests this; it is difficult to distinguish adults from last-instar nymphs.

***Pseudogeloius decorsei* (Bolívar) comb. nov.**

(Figs. 4, 8.)

Geloius decorsei Bolívar, 1905, 284, 286.

In discussing the genus *Geloius* Saussure, 1899, Kevan, Akbar and Singh (1964: 121-127) designated a male neotype for *G. decorsei* (figs. 4, 8), the types having been lost. No male of this species is available for study, but Bolívar's (1905) original description of that

sex, although stating that the cerci are conical (suggesting that the species is congeneric with other species of *Geloius*), indicates also that they are "prolongados hacia adentro en el ápice", which may be taken to mean that they have inwardly directed terminal appendices homologous with those of *Pseudogeloius*. Presumably these appendices are less elaborate than in other species or Bolívar would have commented upon them further; his specimen may, however, have been immature (see above). The indicated form of the male cerci, the completely apterous condition (unlike all other species of *Geloius* which have minute vestigial tegmina), the omission of any mention in the original description of spine-like tubercles on the anterior femora of the male (characteristic of *Geloius*), and the marked similarity between the neotype of *decorsei* and females of *P. relictus*, all indicate that *decorsei* should be transferred to *Pseudogeloius*.

Although species of this genus are rather variable, *P. decorsei* appears to differ from *P. relictus* (which it approaches very closely) by its slightly narrower fastigium verticis and more oblique frontal profile. From *P. affinis* it differs in a contrary fashion. The female antennae are broader and, by implication from Bolívar's description, the male cerci are less elaborate than in either species (but see above). The body also seems to be more strongly beset with longitudinal strumose rugosities, although this character is rather variable, at least in *P. relictus*. The female subgenital plate and ovipositor are very similar to those of *P. relictus*.

***Pseudogeloius affinis* sp. nov.**

Holotype (figs. 4, 9): ♂, Bekily, Sur de Madagascar, III.1933 (*A. Seyrig*)
[Instituto Español de Entomología, Madrid].

Closely resembles male of *P. relictus*, but more slender, with somewhat less prominent eyes, longer antennae (reaching almost to hind coxae), longer, narrower fastigium verticis and more oblique, less concave frontal profile. Body coarsely punctate throughout, but virtually lacking the longitudinal strumose rugosities that are usually indicated in *P. relictus*. Tenth abdominal tergum less broad in dorsal view, with lateral margins less convex and posterior margin broadly and roundly excised with only a small median notch; cerci a little longer, more slender and more strongly curved inwards, their appendices less truncated than in typical *P. relictus* (figs. 20, 21); subgenital

plate slightly less broad and somewhat more acute apically, particularly in lateral view (fig. 21). Phallic structures (fig. 24) of a similar form to those of *P. relictus* (fig. 19) but somewhat smaller; epiphallus with lateral plates somewhat expanded apically and lophi more acute; ectophallic membrane less sclerotized and forming a less definitive hood over the posterior part of the ectophallus (fig. 24 a, cf. fig. 19 a); latter with suprazygoma more triangular and shorter, cingulum valves and associated structures somewhat less elaborate (fig. 24 b, cf. 19 b); endophallus (figs. 24 c, d) shorter and broader, apical parts of aedeagal sclerite and aedeagal valves, shorter, spermatophore sac wider (cf. figs. 19 c, d).

Coloration: very similar to *P. relictus*, mottled griseous and testaceous throughout as indicated in figs. 4, 9, hind femora basically browner.

Measurements: length of body 24.5, head 4.1, pronotum 3.2, hind femur 9.2 mm.

Allotype (figs. 5, 10): ♀, same data as holotype [Madrid].

Much larger than male, but otherwise very similar except that the antennae are shorter (as in ♀ of *P. relictus*), not extending beyond the pronotum. Differs from ♀ *P. relictus* and *P. decorsei* in the same manner as the male; ovipositor valves rather more elongate (fig. 22, cf. fig. 17); subgenital plate strongly lobed, rather than notched, on either side of the more acute apical process (fig. 23, cf. fig. 18).

Coloration: ground colour pale brownish, mottled greyish-brown in a rather distinctive pattern as illustrated in figs. 5, 10, posterior margins of abdominal terga paler, each with a row of distinct blackish maculae, reminiscent of *Geloius finoti* Bolívar, 1905.

Measurements: length of body 47, head 6.5, pronotum 5.8, hind femur 15.0 mm.

Paratype: ♀, Ampandrandave, Sud de Madagascar, III.1932 (*A. Seyrig*).

Similar to the allotype but a little darker in colour and more slender.

Males of this new species are easily distinguishable from those of *Geloius* by their expanded terminalia, elaborate cerci, and in the absence of tegminal vestiges and the characteristic row of denticles on the front femora. The females are less readily separated, but from *G. finoti*, which they resemble most closely, they may be separated by the less fusiform body and absence of tegmen scales. From all other species of *Geloius* they differ in the less strongly excavated frontal profile and

the less broadly expanded antennae. They also lack the strong longitudinal strumose rugosities found in those species.

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EXPLANATION OF PLATES IX-XII

LÁM. IX.

Figs. 1-5.—*Pseudogeloius* spp., type material dorsal ($\times 1.8$). 1, 2. *P. relictus* Dirsh, ♂, ♀ paratypes (Perinet); 3. *P. decorsei* (Bolívar), ♀ neotype (Andranohinaly); 4, 5. *P. affinis* sp. nov., ♂ holotype, ♀ allotype (Bekily).

LÁM. X.

Figs. 6-10.—*Pseudogeloius* spp., type material, lateral ($\times 1.75$). 6, 7. *P. relictus* Dirsh, ♂, ♀ paratypes (Perinet); 8. *P. decorsei* ♀ neotype (Andanohinaly); 9, 10. *P. affinis* sp. nov., ♂ holotype, ♀ allotype (Bekily).

LÁM. XI.

Figs. 11-19.—*Pseudogeloius relictus* Dirsh.

11. Typical form of ♂ terminalia, dorsal; 12. *Id.*, left; 13. Atypical form of ♂ terminalia (from Sakavé), dorsal; 14. Left cercus of same, sublateral; 15. Left cercus of a second atypical ♂ (also from Sakavé), sublateral; 16. Left cercus of last-instar ♂ nymph (from Antanimora), sublateral; 17. End of ♀ abdomen, left; 18. ♀ subgenital plate, ventral; 19. Phallic structures: (a) epiphallus and ectophallic membrane (EM) with sclerotized hood-like portion (H), (b) ectophallus, dorsal (SZ, suprazygoma; CV, cingulum valves), (c, d) endophallus, dorsal and left (AS₁, basal part of aedeagal sclerite; A₂, apical part of same; AV, aedeagal valve; SS, spermatophore sac).

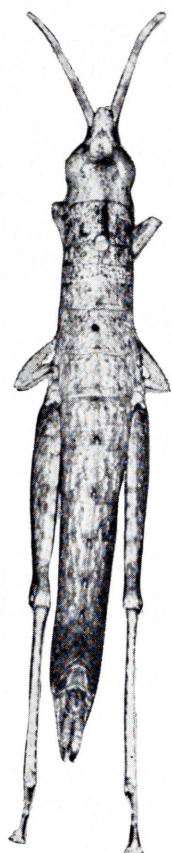
LÁM. XII.

Figs. 20-24.—*Pseudogeloius affinis* sp. nov.

20. ♂ terminalia, dorsal; 21. *Id.*, left; 22. End of ♀ abdomen, left; 23. ♀ subgenital plate, ventral; 24. Phallic structures: (a) epiphallus and ectophallic membrane (EM) with sclerotised hood-like portion (H), (b) ectophallus, dorsal (SZ, suprazygoma; CV, cingulum valves), (c, d) endophallus, dorsal and left (AS₁, basal part of aedeagal sclerite; A₂, apical part of same; AV, aedeagal valve; SS, spermatophore sac.).



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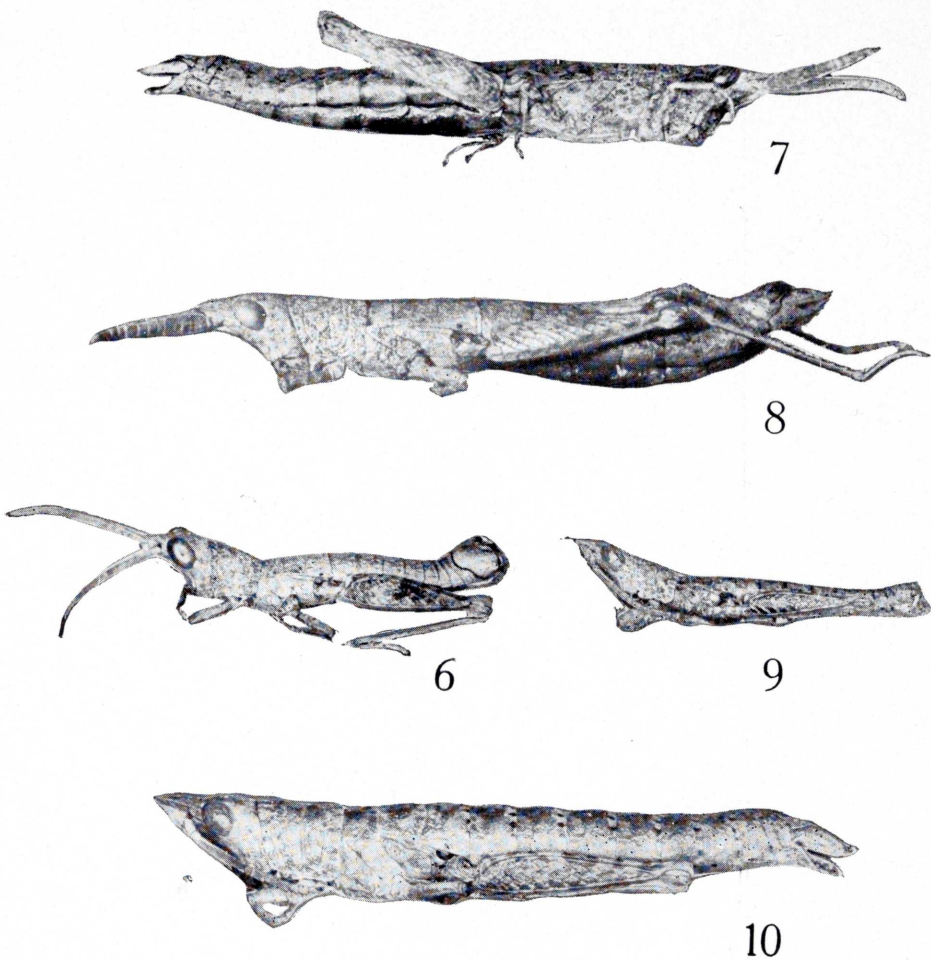


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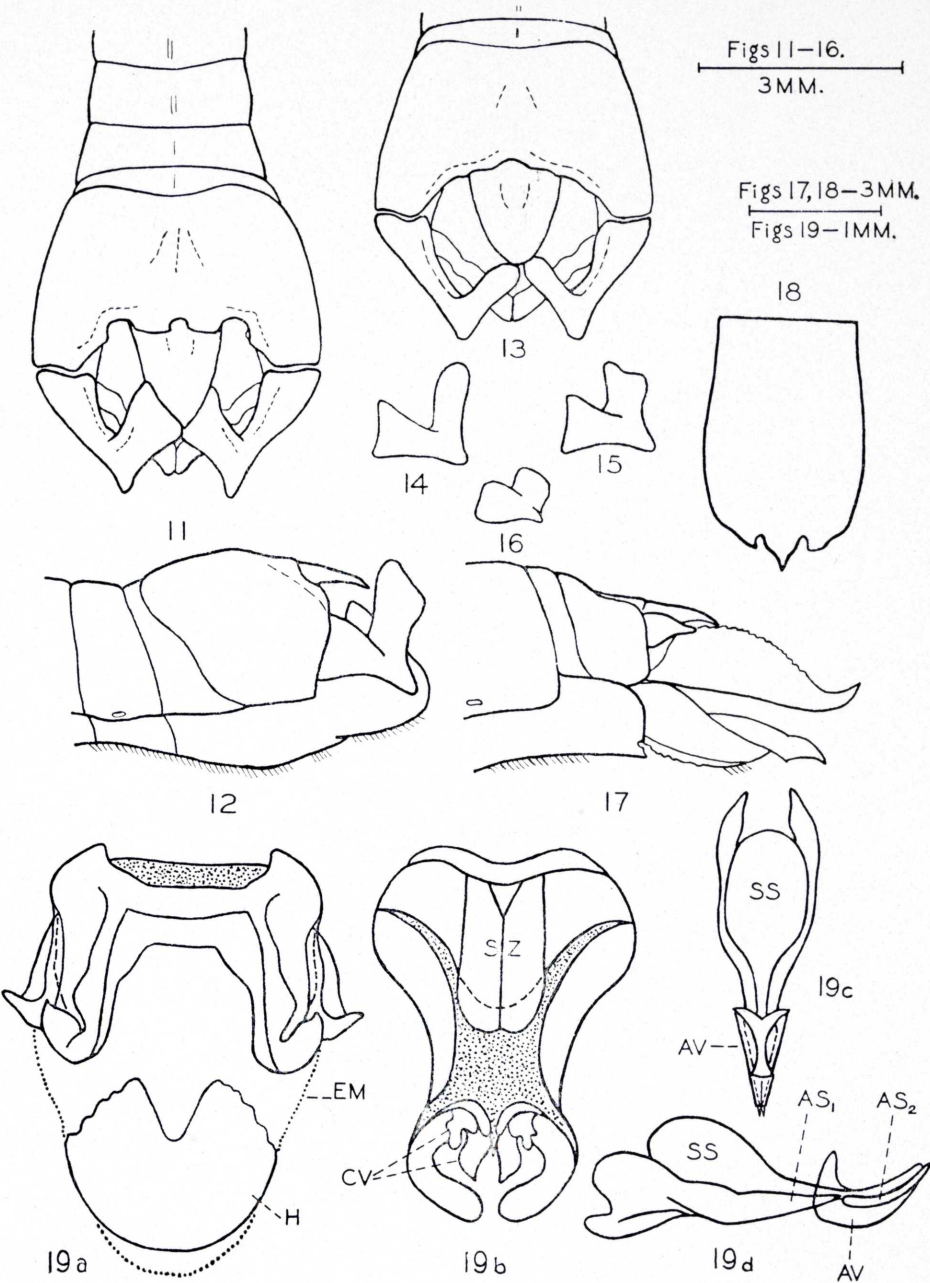


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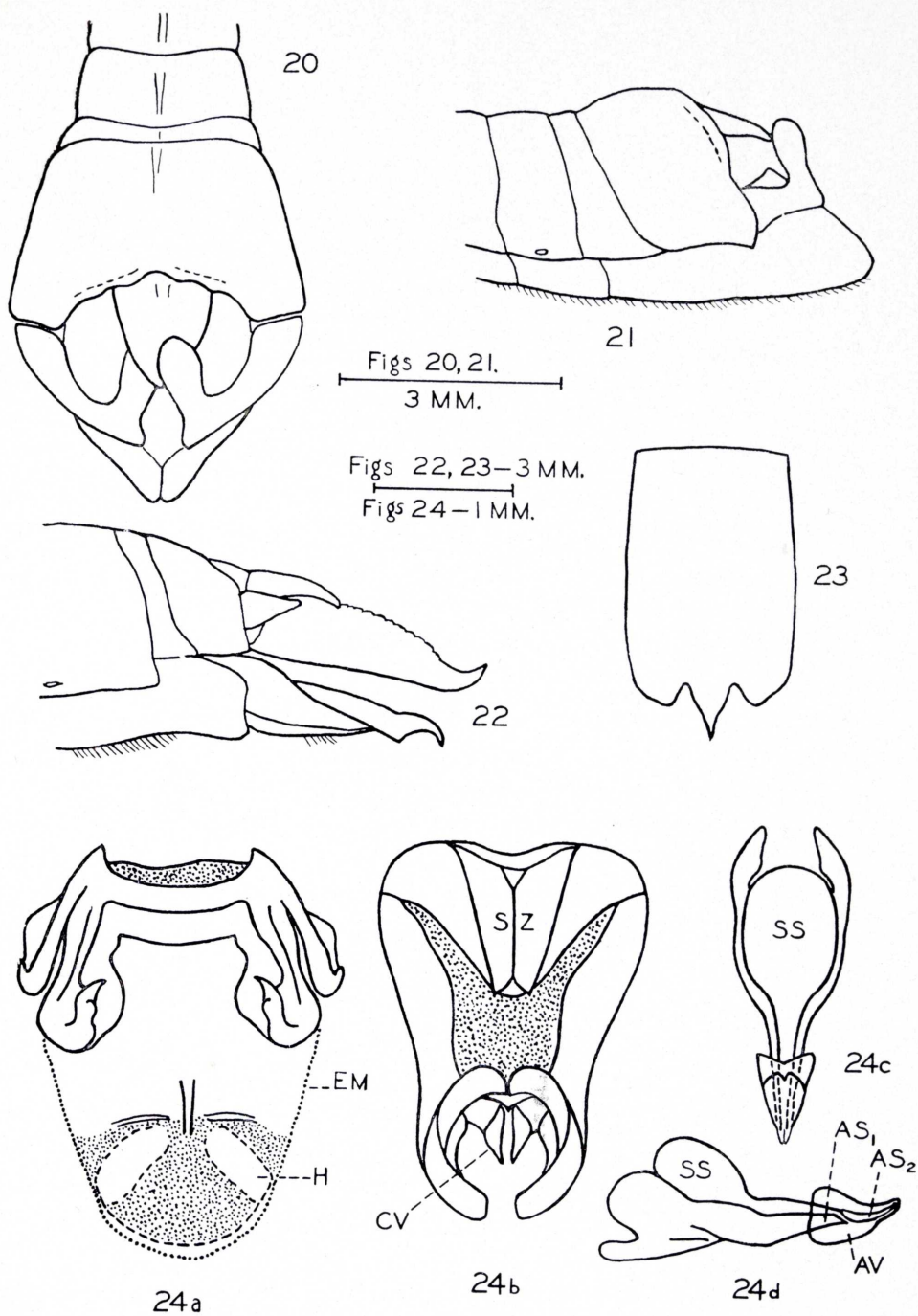
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